Robofest 2004 Challenge for College Teams – "Obstacle Challenges"

Game Abstract
The 2004 competition will simulate a situation in which an autonomous unmanned laptop robot vehicle must navigate around various obstacles while staying in between two dashed lines.

Game Objectives
The main goal of this game is for the robot to complete the entire course without human intervention or assistance in the shortest amount of time.

Obstacle Race Course
The track will be setup inside the gym on a dark blue tarp. The length of the track is unknown. The track width will be approximately 4-7 feet. The width of the white line is approximately 2 inches. A sample track with two dashed lines is shown in figure 1.

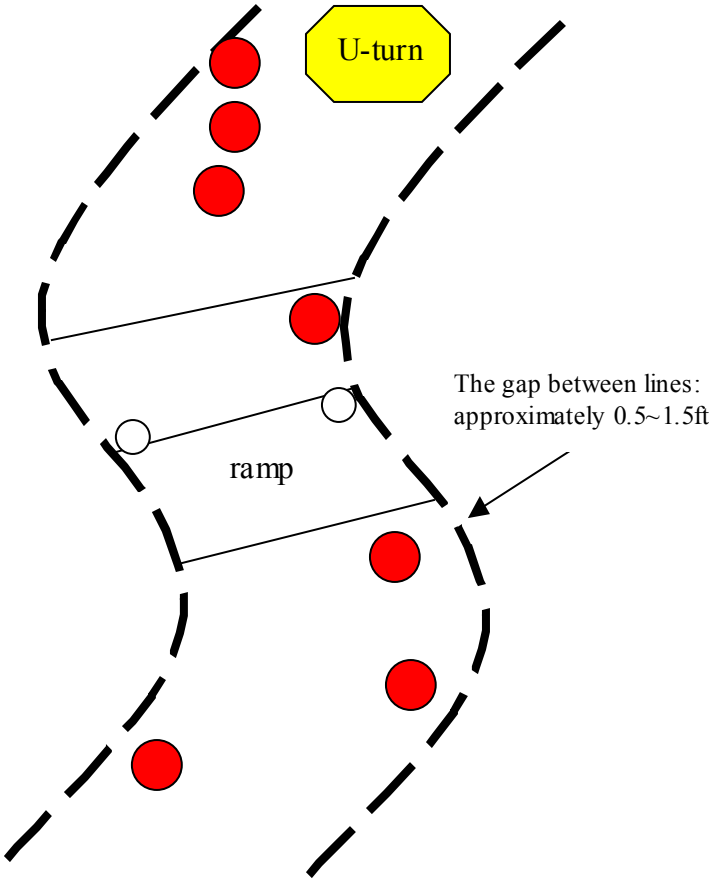

Fig. 1 A Sample Course

The course will include the following obstacles: 5-gallon white pails, full size orange and white construction barrels, white 42 quart round swing top wastebaskets, and orange construction cones. There will also be a ramp for robots to climb up and down. In order to simulate sunlight, there will be (halogen) lamps and strobe lights over the ramp and white lines. The robot must turn around at the end of the course when it sees the yellow U-turn signal and return back home. The robot must

not touch the obstacles. The clearance to pass the obstacle should be greater than or equal to 4.5 feet.

Laptop Robot Specifications

- Any number of on board cameras can be used
- Any sensors can be used
- One laptop can be used
- Speed: no limitations
- Length: minimum 3 feet, maximum 5 feet
- Width, Height, and Weight: no limitations
- Payload: 20 lb (18”x8”x8” box)

Game Rules

- If the robot crosses a dashed line, touches an obstacle or any violation is noted by a referee, the robot will be placed back at the start of the course by the player. The robot will have 3 minutes to complete the course.
- In the event that no robot completes the whole course, the winner will be decided by the distance the robot traveled.

Official version created on 2-12-04 chung